Amendments to the Drawings:

The attached sheet of drawings includes Figures 5, 6A and 6B, but only includes changes to Figure 5. In this regard, Figure 5 is amended to depict openings about a circumferential surface of the tube.

Attachment: Replacement Sheet 4/4

REMARKS

The Official Action objects to the drawings for failing to depict the "openings about a circumferential surface of the tube." Replacement sheet 4/4 is submitted herewith which revises Figure 5 to include the openings about the circumferential surface of the tube. In this regard, Figure 5, as originally filed, included arrows depicting the flow of air at an angled direction extending both radially inward and longitudinally along the tube. As such, Figure 5 has been amended to illustrate the openings in a manner coincident with the arrows indicative of air flow through those openings and into the tube. As such, it is submitted that replacement sheet 4/4 including the revisions to Figure 5 overcome the objection to the drawings.

The Official Action also rejects Claims 1, 3-8, 13 and 19 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. In this regard, the Official Action indicates that it is unclear as to how the openings are made about a circumferential surface of the tube. In order to clarify these claims, independent Claim 1 and dependent Claims 13 and 19 have been amended to recite that the openings are defined in a circumferential surface of the tube. For example, the openings may be defined at various locations in the sidewall of the tube so that air can be drawn through these openings and into the tube in order to prevent a fastener from inhibiting the air flow through the tube. As such, it is submitted that independent Claim 1 and its dependent Claims 3-8 as well as dependent Claims 13 and 19 particularly point out and distinctly claim the subject matter regarded as the invention such that the rejection thereof is overcome.

The Official Action rejects Claim 1 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 3,946,926 to Clyde P. Willis. The Official Action rejects Claim 3 under 35 U.S.C. § 103(b) as being unpatentable over the Willis '926 patent in view of applicant's admitted prior art. The Official Action also rejects Claim 4 under 35 U.S.C. § 103(b) as being unpatentable over the Willis '926 patent in view of U.S. Patent No. 4,609,134 to John W. Dabern. The Official Action also rejects Claims 5-14 under 35 U.S.C. § 103(a) in view of the Willis '926 patent in view of U.S. Patent No. 4, 962,917 to Kinichi Tamura, et al. Claims 15-19 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,220,275 to Albert L. Hametner, et al. in view of the Willis '926 patent. Finally, the Official Action rejects

Claim 20 under 35 U.S.C. § 103(a) as being unpatentable over the Hametner '275 patent in view of the Willis '926 patent and in further view of U.S. Patent No. 4,485,754 to Kenneth A. MacDonald.

Independent Claims 1, 9 and 15 have been amended to further patentably distinguish the claimed invention from the cited references, taken either individually or in combination. Additionally, dependent Claim 19 is amended to correct a typographical error. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration of the present application and the allowance of the current set of claims.

Independent Claim 1 is directed to a fastener insertion device that includes a supply of fasteners, a tube having opposed first and second ends and defining an opening that is larger than the fastener and an air flow generator configured to create air flow through the tube and toward the workpiece such that when the tube is aligned with the hole defined by the workpiece and the fastener is placed in the tube, the air will carry the fastener and insert the fastener into the hole defined by the workpiece. As now amended, independent Claim 1 further recites that the air flow generator is configured to create air flow that enters into the first end of the tube and then flows through the tube in a direction toward the workpiece prior to exiting the tube and flowing through the hole so as to insert the fastener into the hole defined by the workpiece. The tube of Claim 1 also defines openings about a circumferential surface of the tube through which air enters the tube to prevent the fastener from inhibiting the air flow when the fastener is placed in the tube. For example, Figure 5 illustrates air flow in a direction extending both radially into and axially along the passageway defined by the tube as a result of air entering the tube via the openings about the circumferential surface of the tube. As a result, the movement of the fasteners through the tube is facilitated by reducing the likelihood that the fastener will bind against the sidewalls of the tube or otherwise be slowed by frictional engagement with the sidewalls of the tube.

In contrast to amended independent Claim 1, the Willis '926 patent upon which the anticipation rejection of Claim 1 is premised does not teach or suggest an air flow generator that creates air flow that enters into the first end of the tube, flows through the tube in a direction toward the workpiece and then exits the tube such that at least a portion of the air flow flows through the hole into which the fastener is being inserted. In this regard, the Official Action

equates the front barrel assembly 66 of the Willis '926 patent to the tube, but it is notable that the air flow within the front barrel assembly is in a direction away from the workpiece, that is, in a direction opposite to that set forth by amended independent Claim 1. As shown in Figure 6 and the corresponding description in column 6, lines 38-59 of the Willis '926 patent, the air flow enters the receiving chamber 74 from the air and fastener outlet 62 (and not through the first end of the tube as now set forth by amended independent Claim 1). The air then flows away from the workpiece and toward the fastener prior to exiting through the vents 70. As such, the air flow does not serve to carry the fastener through the tube in a direction toward the workpiece so as to insert the fastener into the hole defined by the workpiece as set forth by amended independent Claim 1, but, instead, flows in the opposite direction to assist in holding the fastener against the drive piston 76. Indeed, the Willis '926 patent describes in column 6, line 67-column 7, line 15 that the air supply should be cut off when the drive piston begins its forward movement toward the workpiece since the incoming air will otherwise blow the fastener out of alignment with the drive piston.

Moreover, the Official Action indicates that the air outlets or vents 70 correspond to the openings in the circumferential surface of the tube as recited by independent Claim 1. However, as now amended, independent Claim 1 recites that the openings in the circumferential surface of the tube permit air to enter the tube, as opposed to exiting the tube as described by the Willis '926 patent, to prevent the fastener from inhibiting the air flow when the fastener is placed in the tube.

For each of the foregoing reasons, the Willis '926 patent does not teach or suggest the fastener insertion device of amended independent Claim 1. As such, the rejection of independent Claim 1 as being anticipated by the Willis '926 patent is therefore overcome. Additionally, none of the other cited references teach or suggest those aspects of the fastener insertion device of amended independent Claim 1 that are lacking in the Willis '926 patent and, indeed, none of the other cited references were cited for that purpose. As such, independent Claim 1, as well as the claims which depend therefrom, are not taught or suggested by the cited references, taken individually or in combination, such that the rejection of Claims 1 and 3-8 is therefore overcome.

Independent Claim 9 recites a fastener insertion device that includes a tube defining a passageway larger than the fastener, an air flow generator to create air flow through the tube and

toward the workpiece and a swivelable attachment operably connected to the tube for permitting the tube to be alternatively placed in a first position in alignment with an opening into which the fastener is to be inserted and in a second position out of alignment with the opening into which the fastener is to be inserted. As now amended, independent Claim 9 recites that the air flow generator is configured to be activated when the tube is placed in the first position and to be deactivated when the tube is placed in the second position. See, for example, page 18, lines 6-18 of the present application.

As noted above in conjunction with the discussion relating to independent Claim 1, the Willis '926 patent fails to teach or suggest an air flow generator configured to create air flow through the tube and toward the workpiece such that the air carries the fastener and inserts the fastener into the hole defined by the workpiece. Instead, the air flow within the front barrel assembly of the Willis '926 patent is in the opposite direction, that is, away from the workpiece, so as to hold the fastener upon the drive piston. Neither does the Tamura '917 patent nor any other of the secondary references teaches or suggests an air flow generator configured to create air flow through the tube and toward the workpiece and, indeed, none of these secondary references were cited for such a purpose.

The Official Action notes that the Willis '926 patent fails to teach or suggest a swivelable attachment as set forth by independent Claim 9. As such, the Official Action cites the Tamura '917 patent and asserts that it would have been obvious to one of ordinary skill in the art to utilize the swivelable attachment of the Tamura '917 patent on the device of the Willis '926 patent so as to swivel the tube in different positions. It is submitted, however, that the requisite motivation or suggestion to combine the cited references is lacking since the Willis '926 patent is directed to a handheld fastener driving mechanism. Since the fastener driving mechanism is specifically configured to be handheld, it would appear to be incongruous to combine the handheld fastener driving mechanism with the machine of the Tamura '917 patent, regardless of whether it serves as a swivelable attachment or otherwise. Indeed, the combination of the Tamura '917 patent with the handheld fastener driving mechanism of the Willis '926 patent has all the earmarks of impermissible reliance upon hindsight. As such, it is submitted that the Willis '926 patent and the Tamura '917 patent cannot properly be combined in an effort to obviate independent Claim 9, as well as the claims which depend therefrom.

Even if the Willis '926 patent and the Tamura '917 patent were combined, however, the combination of the cited references would still fail to teach or suggest "said air flow generators configured to be activated when the tube is placed in the first position and to be deactivated when the tube gets placed in the second position" as now set forth by amended independent Claim 9. Since the Willis '926 patent is acknowledged to fail to teach or suggest a swivelable attachment which defines the first and second positions, the Willis '926 patent must also necessarily fail to teach or suggest the activation of the air flow generator when the tube is placed in the first position by the swivelable attachment and the deactivation of the air flow generator when the tube is placed in the second position by the swivelable attachment. Additionally, the Tamura '917 patent does not teach or suggest any relationship between the activation and deactivation of an air flow generator or other device depending upon its position in either first position or second position. As such, no combination of the Willis '926 patent and the Tamura '917 patent teaches or suggests the fastener insertion device of amended independent Claim 9. Additionally, the other secondary references also fail to teach or suggest these same aspects of amended independent Claim 9. Since no combination of the cited references teaches or suggests the fastener insertion device of independent Claim 9, as well as the claims which depend therefrom, it is submitted that the rejection of independent Claim 9, as well as the claims which depend therefrom, are overcome.

Independent Claim 15 is directed to an apparatus for inserting a fastener into a workpiece that includes a fastener insertion device that includes a tube and an air flow generator as well as a tooling platform configured to overlie the workpiece and to define an opening in alignment with the hole defined by the workpiece and a swivelable attachment operably mounted to the tooling platform for permitting the tube to be alternatively placed in alignment with the opening defined by the tooling platform and out of alignment with the opening defined by the tooling platform. As now amended, independent Claim 15 now further recites that the tube and the tooling platform are configured such that at least some of the air flow created by the air flow generator and exiting from the tube then passes through the opening defined by the tooling platform when the swivelable attachment places the tube in alignment with the opening defined by the tooling platform. See, for example, Figure 5 of the present application.

The Hametner '275 patent does not teach or suggest an air flow generator configured to create an air flow that carries a fastener and inserts the fastener into the hole defined by the workpiece. Instead, the fastener selection system of the Hametner '275 patent transports a selected fastener through a tube for delivery to gripping fingers 22. The fastener is then held by the gripping fingers and is inserted into a hole defined by the workpiece by the gripping fingers and not as a result of air flow that causes the fastener to propagate through a tube toward the workpiece and then to the hole defined by the workpiece as set forth in independent Claim 15. As described above, the Willis '926 patent also fails to teach or suggest an air flow generator configured to create the air flow through the tube and toward the workpiece and, instead, generates an air flow that is directed in the opposite direction, that is, away from, the workpiece in order to hold the fastener upon the drive piston.

The Hametner '275 patent also fails to teach or suggest a tooling platform overlying the workpiece and defining an opening in alignment with the hole defined by the workpiece and a swivelable attachment operably mounted upon the tooling platform such that the tube may be alternately placed in alignment with the opening defined by the tooling platform and out of alignment with the opening defined by the tooling platform. Although the Official Action indicates that the carriage 32 serves as the swivelable attachment, the carriage does not swivel in any manner. Instead, the carriage is adapted to linearly translate so that the drill press and the fastener insertion device can alternately be employed. In addition, the Hametner '275 patent fails to teach or suggest that the tube and the tooling platform are configured such that at least some of the air flow that exits the tube passes through the opening defined by the tooling platform when the swivelable attachment places the tube in alignment with the opening defined by the tooling platform. Instead, the air flow described by the Hametner '275 patent merely propagates the fastener through a tube to the gripping fingers and the gripping fingers, in turn, place the fastener in the hole defined by the workpiece without further assistance by the air flow.

For each of the foregoing reasons, the apparatus of amended independent Claim 15, as well as the claims which depend therefrom, are not taught or suggested by the Hametner '275 patent in view of the Willis '926 patent. Additionally, the other cited references also fail to teach or suggest at least these same aspects of the apparatus of amended independent Claim 15 such that no combination of the cited references teaches or suggests the apparatus of amended

independent Claim 15, as well as the claims which depend therefrom. For each of the foregoing reasons, the rejections of independent Claim 15, as well as the claims which depend therefrom, is therefore overcome.

While the dependent claims include the recitations of a respective independent claim and are therefore patentably distinct from the cited references for at least the same reasons as described above in conjunction with the respective independent claims, a number of the dependent claims include additional recitations that provide further patentable distinctions from the cited references. For example, dependent Claim 20 further recites an electromagnet disposed between the tooling platform and the workpiece with the electromagnet defining an opening aligned with the opening defined by the tooling platform and the hole defined by the workpiece. Although the MacDonald '754 patent discloses a plurality of electromagnets 58, there is no teaching or suggestion that such electromagnets should be disposed between the tooling platform and the workpiece as set forth by dependent Claim 20. Moreover, none of the electromagnets of the MacDonald '754 patent define an opening, let along an opening aligned with the opening defined by the tooling platform and the hole defined by the workpiece as set forth by dependent Claim 20.

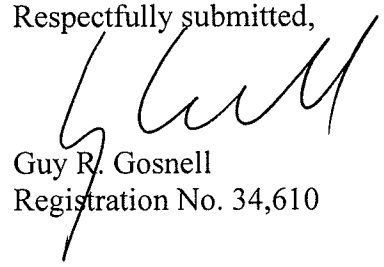
For each of the foregoing reasons, it is also submitted that a number of the dependent claims include additional recitations that further distinguish the claimed invention from the cited references, taken either individually or in combination, and therefore provide additional bases of patentability.

CONCLUSION

In view of the amendments to the claims and the foregoing remarks, it is respectfully submitted that all of the claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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